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(54) FAULT ANALYTICAL METHOD FOR  
SEMICONDUCTOR DEVICE BY USING  
MAGNETIC FLUID

which hardly generates heat, an optical change can be captured.

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(57) Abstract

**PROBLEM TO BE SOLVED:** To enhance a capability to capture an optical change by using an optical microscope even in a current abnormality which hardly generates heat regarding a fault analytical method for a semiconductor device by using a magnetic fluid.

**SOLUTION:** An unpackaged semiconductor device 12 is placed under an objective lens 11, at an optical microscope, on a stage 10 at the optical microscope. The surface of the unpackaged semiconductor device 12 is coated to be thin with a magnetic fluid 13. Interconnections 14, 15 which are used to apply a power-supply voltage are derived from the unpackaged semiconductor device 12 so as to be connected to a power supply 16 which is used to apply the power-supply voltage. When the power-supply voltage is applied to the unpackaged semiconductor device 12 from the power-supply 16, the magnetic fluid 13 is changed near an abnormal part 17 at the unpackaged semiconductor device 12, and its change is observed under the optical microscope. Therefore, even in a current abnormality

